

REFLECTION PAPER

RESPONDING TO EMERGENCY

AR3A010

GRADUATION STUDIO

Complex Projects Beirut



SALAM
Emergency Station



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COMPLEX PROJECTS

Beirut studio

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ASPECT 1

relationship between research and design

On numerous levels, the research has influenced the design and the design has influenced the research, which will be discussed here.

First of all, study into the context (Beirut) has shown which combination of building functions is required and relevant in this setting, a combination between a police station, fire station and ambulance post. Furthermore, clear goals for the design of the Salam Emergency Station could be created as a result of this context research. These goals are, respectively, fast response time of the emergency services, better organization among themselves and a resilient but open design. By drawing up these design ambitions, the research was given more direction, for example, a targeted search could be made for a location that guarantees rapid response times of the emergency services. As a result, this is a clear illustration of how the design (its aims) influenced the research. On the other hand, conducting research into the substantiated selected site imposed design constraints. Better-formulated design choices can be generated precisely by imposing constraints on the design. Moreover, study into resilient architectural principles and research into approachable architecture generated a pool of possible design principles that could be applied to the design. Some of these principles in both research contradicted each other, necessitating ethical considerations; this is covered further in [aspect 5](#).

In addition, research into the required number of emergency services has had a significant impact on the design brief; for example, the number of vehicles required in the context of Beirut, each has its own set of employees. These employees, in turn, generate programmatic requirements. A design brief could be created this way through research. However, it is rapidly determined during the design phase that some program components (from the three different functions) could be merged. There

were other program components introduced that were not established through research but were recognized throughout the design phase to bring a lot of value to the design. In this manner, the research is once again influenced by the design.

Finally, there were research phases during the design process, because there was a need for an in-depth approach for the development of the design. The facade, for example, was a challenge during the design phase, prompting various investigations into its materialization and design.

ASPECT 2

relationship between the graduation topic and studio topic

The focus of the Beirut Studio is on dealing with catastrophe within the built environment. It uses the context of Beirut where on August 4, 2020 a huge explosion destroyed a large part of the bustling city and damaged an even larger part, injuring a lot of people in the process. This occurrence sparked interest in the graduation topic of emergency response and the architectural generation thereof.

According to research, Beirut's emergency services do not work effectively together and do not perform optimally, and there are far too few services in general. On top of that, a significant portion of the services has been wiped out due to the blast. The need for these emergency services is therefore crucial in this graduation research, especially in a city ravaged by a disaster. As a result, the research examines how it might integrate these critical functions and operate optimally in a disaster-stricken community.

In addition, the Salam Emergency Station will be built to withstand eventual future blasts. Creating a base of operations for emergency services that will remain operational during disasters (a futuristic fortress). In this way, the city's safety will be assured and guaranteed in the future. Concluding, the research with its supplementary design has a direct link to dealing with catastrophes in the future as well as dealing with the current situation in Beirut.

ASPECT 3

research method and approach in relation to the graduation studio

The graduating studio of complex projects has a clearly defined research method and approach in which you don't get a lot of freedom to disperse. First of all the urban fabric of a two-kilometer circle in Beirut is being reconstructed in a group. This circle is thoroughly studied in the group (including a site visit to study the atmosphere of the place, as well as an arrange of consultations with universities and more), with hard and soft data being collected. Various conclusions are formed from this data collection that influence the redevelopment of the urban fabric of the circle, as well as individual projects. Furthermore, the individual projects can influence the redevelopment of the area as well. For example, the Salam Emergency Station, has affected the area's redevelopment in such a way that multiple road segments have been reserved for public transportation. These can be utilized by emergency services in the event of an emergency to ensure a swift response time.

Individual research and design are carried out in parallel with group research. Almost all of the guidelines set by the complex projects graduation studio have been followed. This necessitates a thorough site analysis as well as research into the design brief and programmatic relations. In complex projects the design brief is typically created through reference research in order to arrive at a justified square meter program. This research took a different approach than this standard, because the project's combination of functions is relatively new, so there aren't enough reference projects to conduct this research properly. Therefore, the demand for emergency services in Beirut is studied in order to calculate the required number of cars and staff. The program bar was a result of the spacial requirements of the vehicles and employees (functions). Of course, research on the three diverse building types (police station, fire station, and ambulance post) has been conducted to get an understanding of the spaces (and the functions they need).

The design is based on the constraints imposed by the urban redevelopment strategy and those imposed by the individual design brief. Therefore, the design is directed as much as possible by these constraints in order to arrive at a well-founded design. Self-imposed limitations will logically be tested during the design process, and will need to be modified if necessary. The design brief, for example, originally called for the various building functions to be visible from the outside, but it became clear throughout the design phase that this would detract too much from the building's architectural coherence. As a result, this requirement has been changed to only require different interiors to indicate different functions.

ASPECT 4

wider social, professional and scientific relevance

The findings from the research, although tested and focused on Beirut's context, are more widely applicable. For instance, there are several cities around the world experiencing, or at risk of experiencing, crises for which the research and design choices may be relevant. In fact, the research can be relevant for any city where there are safety concerns, both at a building level or in the broader context. While security issues in Beirut are an extreme example, building security in any city is important. Security can come under pressure in various ways, such as terrorism, crises and war, but also milder phenomena such as demonstrations that have gotten out of hand, other political unrest or crime. These are problems not specific to Beirut, but occurring worldwide, even in relatively safe cities.

The balancing between security and approachability can be used in buildings that have safety risks, such as government buildings, banks and buildings with a political function, but also commercial and non-commercial public buildings where many people gather. Additionally, by improving the perceived safety of users and people who pass a building, a more pleasant experience can be made.

ASPECT 5

ethical issues and dilemmas

Beirut is home to a large number of Muslims, Christians, Jews, atheists and people from other various ethnic and religious backgrounds. Of course, the Salam Emergency Station is there to help people in need, but some people who are strongly devout will refuse to be helped by emergency station staff that have a different religion. Of course, a building cannot resolve a theological disagreement, but it should not actively contribute and stimulate to a possible conflict of interests. Therefore, no religious forms or other references to faith were included in the architectural design of the building.

Furthermore, the police have a negative public image, which means they often come into conflict with citizens. By locating the police in the same building as the ambulance and fire department, both of which are well-liked institutions, and highlighting their cooperation, an attempt is made to improve their image. Moreover, the building's restaurant and fitness center have been made public so that the citizen can interact with the police in a casual environment. However, it is impossible to ignore the attacks on the local police, which is why the structure was engineered to be explosion-proof.

Making this building explosion-proof instantly leads to the last conundrum: the building must be incredibly safe while yet providing and displaying public activities. As mentioned before, a balance between the dichotomy of safety and approachability must be struck. As a result, the research's design concepts for safety and approachability may contradict each other. Consequently, the public functions were separated as much as possible from the main volume in the design. Therefore, public functions can be designed to be more transparent, allowing them to stand out more and making the building more legible and approachable. However, as a consequence, they will be slightly less secure than the remainder of the emergency station.

